

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (currently amended): A photo-induced thermally developable film comprising:

a polymer matrix having a form of a layer in a solid phase and having a first refractive index;

at least one monomer compatible with the polymer matrix and having a second refractive index different from the first refractive index;

a procatalyst, where the procatalyst is convertible to a latently active form, the latently active form of the procatalyst is convertible to an active form, and the active form of the procatalyst is capable of polymerizing the at least one monomer; and

a cocatalyst, where the cocatalyst is suitable for converting the procatalyst to the latently active form upon exposure to actinic radiation and the latently active form is convertible to the active form upon heating to a first temperature,

where the monomer, procatalyst and cocatalyst are dispersed in the layer of the polymer matrix.

Claim 2 (original): The photo-induced thermally developable film of Claim 1, where the procatalyst is convertible to an active form without exposure to the actinic radiation upon heating to a second temperature higher than the first temperature.

Claim 3 (original): The photo-induced thermally developable film of Claim 1, further comprising at least one antioxidant.

Claim 4 (original): The photo-induced thermally developable film of Claim 1, where the polymer matrix comprises one of a homopolymer, a copolymer and a terpolymer.

Claim 5 (original): The photo-induced thermally developable film of Claim 1, where the polymer matrix comprises first repeat units and second repeat units.

Claim 6 (original): The photo-induced thermally developable film of Claim 5, where the first repeat units comprise alkyl norbornene repeat units and the second repeat units comprise norbornene-type repeat units.

Claim 7 (original): The photo-induced thermally developable film of Claim 6, where the alkyl norbornene repeat units comprise hexyl norbornene repeat units and the norbornene-type repeat units comprise diphenylmethoxy norbornenemethoxy repeat units.

Claim 8 (original): The photo-induced thermally developable film of Claim 6, where the alkyl norbornene repeat units comprise hexyl norbornene repeat units and the norbornene-type repeat units comprise benzyl norbornene repeat units.

Claim 9 (original): The photo-induced thermally developable film of Claim 6, where the alkyl norbornene repeat units comprise hexyl norbornene repeat units and the norbornene-type repeat units comprise phenylethyl norbornene repeat units.

Claim 10 (original): The photo-induced thermally developable film of Claim 1, where the at least one monomer comprises at least one norbornene-type monomer.

Claim 11 (original): The photo-induced thermally developable film of Claim 10, where the at least one norbornene-type monomer comprises a norbornene-type monomer having an alkyl pendant group.

Claim 12 (original): The photo-induced thermally developable film of Claim 10, where the at least one norbornene-type monomer comprises hexyl norbornene and bis-norbornenemethoxy dimethylsilane.

Claim 13 (original): The photo-induced thermally developable film of Claim 11, where the polymer matrix comprises hexyl norbornene repeat units and diphenylmethoxy norbornenemethoxy silane repeat units.

Claim 14 (original): The photo-induced thermally developable film of Claim 1, where the at least one monomer comprises a crosslinker monomer.

Claim 15 (original): The photo-induced thermally developable film of Claim 14, where the crosslinker monomer comprises a norbornene-type crosslinker monomer.

Claim 16 (original): The photo-induced thermally developable film of Claim 1, where the cocatalyst comprises a photoinitiator.

Claim 17 (original): The photo-induced thermally developable film of Claim 16, where the photoinitiator comprises a cationic photoinitiator which produces a cation and a weakly coordinating anion upon exposure to an actinic radiation, and the procatalyst is converted to the latently active form in association with the weakly coordinating anion.

Claim 18 (original): The photo-induced thermally developable film of Claim 2, where the procatalyst is represented by the formula $(E(R)_3)_2Pd(Q)_2$, where $E(R)_3$ is a Group 15 neutral electron donor ligand, E is an element selected from the group consisting of elements of Group 15 of the Periodic Table, R in $E(R)_3$ is one of a hydrogen, an isotope thereof and a hydrocarbyl containing moiety, and Q is an anionic ligand selected from the group consisting of a carboxylate, a thiocarboxylate and a dithiocarboxylate.

Claim 19 (original): The photo-induced thermally developable film of Claim 2, where the procatalyst is represented by the formula $[(E(R)_3)_aPd(Q)(LB)_b]_p[WCA]_q$, where $E(R)_3$ is a Group 15 neutral electron donor ligand, E is a Group 15 element, and R independently is one of a hydrogen, an isotope thereof and an anionic hydrocarbyl containing moiety, Q is an anionic ligand selected from the group consisting of a carboxylate, a thiocarboxylate and a dithiocarboxylate, LB is a Lewis base, WCA represents a weakly coordinating anion, a is an integer of 1, 2, or 3, b is an integer of 0, 1, or 2, where $a + b$ is 1, 2, or 3, and p and r are integers that represent a number of times a palladium cation and the weakly coordinating anion are taken to balance an electronic charge on a structure of $[(E(R)_3)_aPd(Q)(LB)_b]_p[WCA]_q$.

Claim 20 (original): The photo-induced thermally developable film of Claim 19, where p and r are independently selected from an integer of 1 and 2.

Claim 21 (original): The photo-induced thermally developable film of Claim 1, where the polymer matrix comprises repeat units, at least some of the repeat units each comprise a cleavable pendent group which is at least partly cleaved from the polymer matrix and removed from the photo-induced thermally developable film as a result of exposure to the actinic radiation and heating to the second temperature, whereby altering the first refractive index.

Claim 22 (original): The photo-induced thermally developable film of Claim 21, where the cleavable pendent group comprises at least one component selected from the group consisting of -O-, Si-phenyl and -OSi-.

Claim 23 (original): The photo-induced thermally developable film of Claim 1, further comprising a sensitizer.

Claim 24 (currently amended): A photo-induced thermally developable film comprising:

a polymer matrix having a form of a layer in a solid phase, having a first refractive index and including a cleavable pendant group; and

a photoinitiator which produces a cation and a weakly coordinating anion upon exposure to actinic radiation,

where the cleavable pendant group of the polymer matrix is at least partly cleaved upon the exposure to actinic radiation such that the first refractive index of the polymer matrix is altered in a portion of the polymer matrix exposed to the actinic radiation, and the photoinitiator is dispersed in the layer of the polymer matrix.

Claim 25 (original): The photo-induced thermally developable film of Claim 24, further comprising at least one antioxidant.

Claim 26 (original): The photo-induced thermally developable film of Claim 24, where the polymer matrix comprises one of a homopolymer, a copolymer and a terpolymer.

Claim 27 (original): The photo-induced thermally developable film of Claim 24, where the polymer matrix comprises first repeat units and second repeat units.

Claim 28 (original): The photo-induced thermally developable film of Claim 27, where the first repeat units comprise alkyl norbornene-type repeat units and the second repeat units comprise norbornene-type repeat units.

Claim 29 (original): The photo-induced thermally developable film of Claim 28, where the alkyl norbornene-type repeat units comprise hexyl norbornene repeat units and the norbornene-type repeat units comprise diphenylmethyl norbornenemethoxy silane repeat units.

Claim 30 (original): The photo-induced thermally developable film of Claim 24, further comprising a procatalyst and at least one monomer compatible with the polymer matrix.

Claim 31 (original): The photo-induced thermally developable film of Claim 30, where the procatalyst is capable of being converted to a latently active form in association with the weakly coordinating anion and to an active form upon application of sufficient heat, the procatalyst in the active form polymerizing the at least one monomer.

Claim 32 (original): The photo-induced thermally developable film of Claim 30, where the at least one monomer comprises at least one norbornene-type monomer.

Claim 33 (original): The photo-induced thermally developable film of Claim 32, where the at least one norbornene-type monomer comprises hexyl norbornene and bis-norbornenemethoxy dimethylsilane.

Claim 34 (original): The photo-induced thermally developable film of Claim 33, where the polymer matrix comprises hexyl norbornene repeat units and diphenylmethyl norbornenemethoxy silane repeat units.

Claim 35 (original): The photo-induced thermally developable film of Claim 32, where the at least one norbornene-type monomer comprises a norbornene-type monomer having an alkyl pendant group.

Claim 36 (original): The photo-induced thermally developable film of Claim 30, where the at least one monomer comprises a norbornene-type crosslinker monomer.

Claim 37 (original): The photo-induced thermally developable film of Claim 30, where the procatalyst is represented by the formula $(E(R)_3)_2Pd(Q)_2$, where $E(R)_3$ is a Group 15 neutral electron donor ligand, E is an element selected from the group consisting of elements of Group 15 of the Periodic Table, R in $E(R)_3$ is one of a hydrogen, an isotope thereof; and a hydrocarbyl containing moiety, and Q is an anionic ligand selected from the group consisting of a carboxylate, a thiocarboxylate and a dithiocarboxylate.

Claim 38 (original): The photo-induced thermally developable film of Claim 30, where the procatalyst is represented by the formula $[(E(R)_3)_aPd(Q)(LB)_b]_p[WCA]_q$, where $E(R)_3$ is a Group 15 neutral electron donor ligand, B is a Group 15 element, and R independently is one of a hydrogen, an isotope thereof; and an anionic hydrocarbyl containing moiety, Q is an anionic ligand selected from the group consisting of a carboxylate, a thiocarboxylate and a dithiocarboxylate, LB is a Lewis base, WCA represents a weakly coordinating anion, a is an integer of 1, 2, or 3, b is an integer of 0, 1, or 2, where $a + b$ is 1, 2, or 3, and p and r are integers that represent a number of times a palladium cation and the weakly coordinating anion are taken to balance an electronic charge on a structure of $[(E(R)_3)_aPd(Q)(LB)_b]_p[WCA]_q$.

Claim 39 (original): The photo-induced thermally developable film of Claim 38, where p and r are independently selected from an integer of 1 and 2.

Claim 40 (original): The photo-induced thermally developable film of Claim 24, where the cleavable pendent group comprises at least one component selected from the group consisting of -O-, Si-phenyl and -OSi-.

Claim 41 (original): The photo-induced thermally developable film of Claim 24, further comprising a sensitizer.

Claims 42 - 129 (canceled)